

Question Paper

Exam Date & Time: 03-Dec-2018 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

II SEMESTER B.S. ENGG. END SEMESTER EXAMINATION - NOV./ DEC. 2018

Java Programming [ICS 121]

Marks: 100

Duration: 180 mins.

Answer 5 out of 8 questions.

- 1) With an example java program, explain the concepts of abstraction, encapsulation, inheritance and polymorphism. (10)
A)
B) What is the need for for-each version of for loop in Java? (10)
What are the limitations of for-each? Write a Java code to print the following using 2D array:

0	2	4	6
8	10	12	
14	16		
- 2) Create a class called Counter that contains a static data member to count the number of Counter objects being created. Also define a static member function called showCount() which displays the number of objects created at any given point of time. Illustrate this. (10)
A)
B) Write short notes on: (10)
i) Byte code
ii) finalize()
- 3) Write complete Java code to implement dynamic stack. (10)
A)
B) What is dynamic method dispatch? Explain with a complete example program Java's way to achieve run time polymorphism. (10)
- 4) Design a class Box with data members width, height and depth. Define overloaded constructor of class Box (without parameter, single parameter and all three parameters). Design another class, derived class of Box, BoxWeight with data member weight. Demonstrate the pass of argument (12)
A)

to Box constructor in BoxWeight constructor with the help of super in all three overloaded constructors.

- B) Write complete Java code to add three numbers taken from command line argument? (8)
- 5) What is a package? What are the benefits of defining a package? (4)
- A)
- B) Develop following methods (16)
- i) min (which finds the minimum in an array and returns it)
- ii) min (which finds the minimum in a matrix and returns the result)
- Place this in a package called p1. Let this package be present in a folder called "myPackages", which is a folder in your present working directory . Write a main method to use the methods of package p1.
- 6) What is an exception? Define ArrayIndexOutOfBoundsException and StringIndexOutOfBoundsException exceptions with the help of sample code. (8)
- A)
- B) Write and execute a java program to create two different thread classes by extending Thread class, the first thread prints multiplication table for 3 in the form $1 * 3 = 3$ (first 10 terms in different lines) and the second thread prints multiplication table for 8. Create a class called Tables which will instantiate the two different thread classes. (12)
- 7) List the differences between method overloading and overriding in Java with the help of example code. (12)
- A)
- B) Define following: (8)
- i) finally block
- ii) static block
- 8) Write a Swing applet to create 3 radio buttons red, green and blue and a label which displays the color selected when one of the radio buttons is clicked. (12)
- A)
- B) Write a java program to copy one file to other using stream classes of java.io package (8)

-----End-----